

**REMARKS**

Upon entry of the instant amendment, claims 1-6 will remain pending in the above-identified application and stand ready for further action on the merits.

The amendments made herein to claims 1-6 do not incorporate new matter into the application as originally filed. For example, support for the amendment of claim 1 occurs at page 4, line 10 to page 5, line 3 of the original specification. It is additionally noted that the amendment of claims 1-6 to recite “compound” instead of “derivative” finds support throughout the originally filed application. Additionally, claims 2-6 have been grammatically amended herein to properly refer back to antecedent basis in claim 1.

***Claim Objection***

Claims 1-6 have been objected to based on an alleged informality occurring therein. An appropriate grammatical correction has been made herein to claims 1-6, which is submitted to obviate the Examiner’s objection. Reconsideration of the objection is thus respectfully requested at present.

***Rejection under 35 USC 112, Second Paragraph***

Claims 1-6 have been rejected under the provisions of 35 USC § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as his invention.

Reconsideration and withdraw of this rejection is respectfully requested based on the amendments made herein, and the following considerations.

The outstanding 35 USC § 112 rejection is partially based on the use of the term "substituted" in the original claims. Inasmuch as the term "substituted" is clarified by the instant amendment to claim 1, it is submitted that withdraw of the portion of the outstanding rejection based on the use of the term "substituted" in the pending claims is proper at present.

Regarding the portion of the rejection that is based on the use of the term "derivative" in claims 1 to 6, it is noted that the term "derivative" has been changed to "compound" in each of pending claims 1-6, so that this partial grounds for rejecting claims 1-6 is now effectively rendered moot.

Apart from the above considerations, as stated in M.P.E.P. §§ 2173.01 and 2173.02 :

*A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. See MPEP § 2111.01. Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As noted by the court in In re Swinehart, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.*

*The examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement.*

***Claim Rejections - 35 USC 103(a)***

Claims 1-6 have been rejected under the provisions of 35 USC § 103(a) as being rendered obvious by *Taylor* (SYNTHESIS, 7, p. 554-555 (1980)), in view of *Yang et al.* (J. ORG. CHEM., 66, p. 4814-4818 (2001)). Reconsideration and withdraw of this rejection is respectfully requested based on the following considerations.

*Legal Standard for Determining Prima Facie Obviousness*

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

“There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

“In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification.” *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. “The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

*Distinctions Over the Cited Art*

*Taylor* discloses a process for producing a caronaldehyde by ozonolysis of a chrysanthemate (*see* page 554, right column, lines 8-10). *Yang et al.* disclose oxidation of olefins with ozone as a process for producing aldehydes from olefins (*see* page 4814, left column, lines 6-16), and Table 4 (*see* page 4817, right column) of *Yang et al.* discloses the results of oxidative cleavage of monosubstituted aliphatic olefins together with the reaction scheme.

On the other hand, the present invention relates to a process for producing a 3,3-dimethyl-2-formylcyclopropane carboxylic acid compound of the formula (2), which is characterized by reacting a 3,3-dimethyl-2-(2-methyl-1-propenyl)cyclopropanecarboxylic acid compound of the formula (1) with a periodic acid compound in the presence of a ruthenium compound.

Additionally, according to the process of the present invention, the 3,3-dimethyl-2-formylcyclopropane carboxylic acid compound of the formula (2) can be obtained in a good yield. Although the yield may vary depending on the particular kinds of the ruthenium compound and the periodic acid compound, generally, the 3,3-dimethyl-2-formylcyclopropane carboxylic acid compound of the formula (2) can be obtained in a good yield of about 80% or more (see Examples of the present application).

Further, the reaction proceeds very well with such a small amount of the ruthenium compound being used, such as 0.1 to 0.46 mol % relative to the starting 3,3-dimethyl-2-(2-methyl-1-propenyl)cyclopropanecarboxylic acid compound of the formula (1).

The Examiner points out the reaction of Table 4 of *Yang et al.* and states that it would have been obvious to the skilled artisan in the art to be motivated to prefer the *Yang et al.* ruthenium catalyzed oxidation to the ozonization of the olefin in the *Taylor* process. However, it should be noted that 3,3-dimethyl-2-(2-methyl-1-propenyl)cyclopropanecarboxylic acid compound of the formula (1) is a trisubstituted olefin and different from monosubstituted olefins of Table 4 of *Yang et al.* Although Table 3 of *Yang et al.* discloses the results of the reaction using trisubstituted olefins, the yields of the objective aldehydes are at most 80% and the

amount of ruthenium chloride used is 3.5 mol %, *i.e.*, about ten times as much as the amount in *the* present invention.

Accordingly, it is clear that, even if *Taylor* and *Yang et al.* are combined, they do not teach or suggest that the 3,3-dimethyl-2-formylcyclopropane carboxylic acid compound of the formula (2) can be obtained *in a good yield* by reacting a 3,3-dimethyl-2-(2-methyl-1-propenyl)cyclopropanecarboxylic acid compound of the formula (1) with a periodic acid compound in the presence of such *a small amount* of a ruthenium compound.

Accordingly, it is submitted that no motivation exists in the cited art of record to arrive at the instant invention as claimed, and that one of ordinary skill in the art upon considering the disclosures of the cited art of Taylor and Yang et al. would not arrive at instant invention as claimed. Any contentions of the USPTO to the contrary are respectfully requested to be reconsidered at present.

### **CONCLUSION**

Based on the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance in the matter of the above-identified application, clearly indicating that each of the instantly pending claims are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey Reg. No. 32,881 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

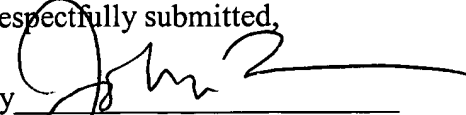
***Reply to Non-Final Office Action of July 19, 2006***

***Docket No. 0020-5273PUS1  
Application Serial No. 10/501,094***

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,



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